1.9.22. NEW CONCEPT FOR FAST, EFFICIENT AND ECONOMIC INSPECTION OF HIGH VOLUME, HIGH MIX INDUSTRIAL COMPONENTS USING ADVANCED HIGH SPEED COMPUTED TOMOGRAPHY SYSTEMS

Beyer A., Stuke I., Brunke O.,
GE Sensing & Inspection Technologies, Ahrensburg, Germany

In process inspection capability is increasingly used as early in the production value chain as possible to ensure lowest scrap- or rework cost as possible. As fast radioscopic inline inspection systems fully unmanned and equipped with automatic defect recognition, e.g. of castings, are state of the art technology, this paper shows the next evolutionary step within the X-ray technology in utilizing fast computer tomography algorithm and scanning concepts fulfilling high throughput requirements for different applications. We show that this new generation of CT solutions bring down scanning time from multiple hours to minutes and providing sufficient image quality to meet many of today's and future inspection requirements.

With the new generation of CT systems for fast porosity/inclusion evaluation, 3D dimensioning and CAD compare the industry now has new tools for totally integrated and unmanned inspection. Fast CT systems include automated scanning and – test protocol generation, up to the point were the inspection results are directly linked back to ensure immediate adjustment of the production process to meet predefined specifications.

Fast CT solutions also pose a new challenge on the documentation and archival requirements for many different applications due to the amount of data generated. This paper outlines concepts to solve this critical issue as well, which becomes increasingly important for the industry.